DOCUMENT RESUME

ED 210 287 TM 810 924

TITLE	Educational Improvement Act: Diagnostic Testing.
INSTITUTION	Kentucky State Dept. of Education, Frankfort. Office of Research and Planning.
PUB DATE	81
NOTE	36p.
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Diagnostic Tests; Elementary Secondary Education; *Quantitative Tests; *Reading Tests; State Departments of Education; *State Programs; State School District Relationship; *Testing Programs
IDENTIFIERS	Diagnostic Mathematics Inventory; *Kentucky State Department of Education; Prescriptive Reading Inventory

ABSTRACT

The Kentucky Department of Education has a responsibility to provide technical assistance and consultative services to local school districts. Descriptions of the state selected diagnostic reading test, the Prescriptive Reading Inventory (PRI) and the diagnostic math test, the Diagnostic Math Inventory (DMI), are explained. Each school district in the state has the option of utilizing the state diagnostic test services or choosing an appropriate alternate form of diagnostic assessment. These tests are to be administered to students identified by screening instrument or teacher judgement as being most in need of assistance. Materials are available for grades four, six, eight, and eleven. Detailed instructions for training examiners and proctors are included in the manual. A description of the PRI and DMI, along with report and scoring forms are included. A scoring service is provided by the state. Recommended activities of the Educational Improvement Program coordinator are listed. (DWH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED210287

Kentucky

Educational Improvement Act

Diagnostic Testing

1981

Office of Research and Planning
Kentucky Department of Education

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

D Swanson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

TM 810 924

Cost of printing paid with state funds.

Message from the Superintendent

The Kentucky Department of Education has a primary responsibility to provide technical assistance and consultative services to local school districts. This role is partially fulfilled through this booklet and the services and assistance offered in relation to the diagnostic testing program.

The testing program has been available to each local district in the Commonwealth since the beginning of the 1979-80 school year and once again is provided by the department through the Office of Research and Planning. The diagnostic tests help local district personnel identify specific areas of educational strengths and weaknesses and thus serve as a tool for development of an Educational Improvement Plan which is required by the Educational Improvement Act of 1978.

Should you need specific help in administering the tests or interpreting the results, representatives of the Office of Research and Planning will be available on request.

Raymond Barber

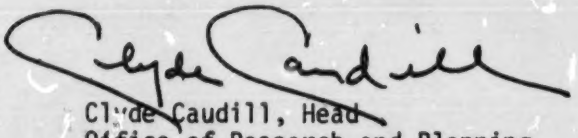
Raymond Barber
Superintendent of Public Instruction

FOREWORD

The Office of Research and Planning has the responsibility for coordinating all testing services administered by the Kentucky Department of Education. Among those services are the diagnostic tests which are described in this booklet. These tests constitute the second phase of testing as related to the Educational Improvement Act of 1978.

This will be the last year that the diagnostic testing program will use the Prescriptive Reading Inventory (PRI) and the Diagnostic Mathematics Inventory (DMI). Since the Department of Education recognizes the value of diagnostic testing, a new test, CTBS/U, has been selected for use beginning in the spring of 1982. This test is both norm-referenced and criterion-referenced. This will result in diagnostic information on every child through one administration of the test each spring. Districts wanting to obtain diagnostic information on specific students or all students from fall testing may obtain this data through the voluntary scoring service. The new test will eliminate the requirement for retesting specified students. However, if a district should opt to retest students in the fall, the scoring service will be available.

We believe the information contained in this publication will be of value in planning your district's program in diagnostic testing. Should you need assistance, the staff of the Office of Research and Planning will be available to help you in planning and developing your diagnostic testing program. You may contact the office at the address below.



Clyde Caudill, Head
Office of Research and Planning

Office of Research and Planning
Kentucky Department of Education
Capital Plaza Tower
Frankfort, Kentucky 40601

(502) 564-4394

TABLE OF CONTENTS

	page
Diagnostic Testing	1
Free Materials Provided	3
Administering the Test	5
Description of the PRI	8
Description of the PRI Reports	9
Description of the DMI	13
Description of the DMI Reports	15
Scoring Information	21
Time Frame for Diagnostic Testing	24
Recommended Activities of the EIP Coordinator	25

DIAGNOSTIC TESTING

During the last school year and again this year, each district will have the opportunity during the last two weeks of August and the first week of September to utilize the state diagnostic test services or to choose an appropriate alternate form of diagnostic assessment to be administered to those students identified by the screening instrument or teacher judgement as being most in need of assistance. Some form of diagnostic assessment must be performed in the district's identified priority curriculum area.

The diagnostic test assists local districts in pinpointing specific areas of educational strengths and weaknesses. Results of this test may be used in determining the precise scope of proposed educational improvement programs or activities. The Department of Education provides a state diagnostic testing service (test booklets, answer sheets, and scoring) in the areas of Reading and Math. This service may be utilized in both areas of Reading and Math even if only one is chosen as a district's priority or the service may be utilized even if neither Reading or Math happen to be a district's priority area. This service is provided at no cost to the district.

It is not required that the district utilize the state diagnostic testing service if other diagnostic tests or alternate forms of diagnostic assessment are available to the district in their identified priority area. However, a district must notify the Department of Education in writing if it prefers to use an alternate procedure whenever its priority is in either Reading or Math. Any alternate procedure in either Reading or Math, when one of these is the district's priority, must be approved by the Department. The district itself will bear the cost of the alternate diagostic assessment. The Office of Research and Planning should be notified by any district choosing to use an alternate procedure prior to August 15, 1981.

Descriptions of the state selected diagnostic reading test (the *Prescriptive Reading Inventory*) and the diagnostic math test (the *Diagnostic Math Inventory*) and their respective scoring reports are explained within this booklet. It is hoped that this information will assist you in deciding whether or not to participate in this state service. You will also find within this booklet procedures which must be followed in order to participate in this free diagnostic testing service. These procedures and this fall's diagnostic testing

program are almost identical to those of last year. However, the following changes have been made:

1. An adjustment downward has been made in the levels of the PRI and DMI used in each of the EIP grades. The CAT/C Reading is no longer being used in grade eleven with EIP candidates but in its place the PRI Level D/Orange will be used. This adjustment of levels will improve the floor of the instruments used at each grade.
2. The contractual agreement for scoring of the PRI and the DMI include the purchase of predicted CAT normative scores.
3. The contractual agreement for scoring allows for weekly shipments to the California Test Bureau in order to improve the turn around time for districts that test early.

Free Materials Provided

The following list of materials are those that will be provided to each district choosing to participate in the diagnostic testing service. These materials will be mailed to participating districts in mid-August in sufficient quantities to test EIP candidates in grades 4, 6, 8, and 11. The quantities mailed will be determined by the Department according to the number of students identified below the cutting score in Reading and Math plus 10 percent to allow for additional students identified by teacher judgement as candidates. Any district feeling that the quantity determined by the Department is insufficient should immediately contact the Office of Research and Planning and request the additional materials needed. All materials provided to a district remains the property of the Department of Education but it shall be the responsibility of the district to maintain and store the reusable materials for the next school year.

The materials which will be mailed to participating districts are as follows:

GRADE 4
- PRI Level A (Red) Booklets - Machine Scoreable
- PRI Level A (Red) Examiner's Manuals
- DMI Level A (Red) Booklets - Machine Scoreable
- DMI Level A (Red) Examiner's Manuals

GRADE 6
- PRI Level B (Green) Booklets - Machine Scoreable
- PRI Level B (Green) Examiner's Manuals
- DMI Level B (Green) Booklets - Machine Scoreable
- DMI Level B (Green) Examiner's Manuals

GRADE 8
- PRI Level C (Blue) Booklets - Reusable
- PRI Level C (Blue) Examiner's Manuals
- PRI Level C (Blue) Answer Sheets
- DMI Level C (Blue) Booklets - Reusable
- DMI Level C (Blue) Examiner's Manuals
- DMI Level C (Blue) Answer Sheets

GRADE 11
- PRI Level D (Orange) Booklets - Reusable
- PRI Level D (Orange) Examiner's Manuals
- PRI Level D (Orange) Answer Sheets
- DMI Level D (Orange) Booklets - Reusable
- DMI Level D (Gray) Examiner's Manuals
- DMI Level D (Orange) Answer Sheets

ANCILLARY MATERIALS
- Group Information Sheets (Green)
- Group Information Envelopes
- DMI Learning Activities Guide
- DMI Teacher's Guide
- PRI Interpretive Handbook

Description of New Ancillary Materials

PRI *Interpretive Handbook*

The *Interpretive Handbook* gives a thorough description of the PRI and its development. The *Handbook* further explains the interpretation and use of the PRI reports and describes some of the research involved in developing the program. It also gives the list of objectives tested in the PRI and notes the test level or levels in which each appears. To supplement the Individual Study Guide and Program Reference Guide, the *Handbook* also provides suggested classroom activities that can help remediate reading deficiencies. These activities are coded to the list of objectives.

DMI *Teacher's Guide*

The *Teacher's Guide* provides a thorough description of the DMI and its development, lists the objectives measured by each level, gives detailed information on the use of the reports, and suggests classroom organization for teaching the objectives measured by the test.

DMI *Learning Activities Guide*

The *Learning Activities Guide* contains suggestions for activities which can be used to help teach the skills represented by the objectives and to remedy errors made by the students.

Administering the Tests

Planning

Working with other district or school officials, the test coordinator schedules the test dates and plans an efficient testing program. An effort should be made to create a testing situation that allows students to do their best. Before the date of testing it is advisable to announce the kind of test to be given and its purpose. Teachers and examiners should be careful to communicate interest rather than anxiety to the students.

It is preferable to schedule testing for a period early in the school day. If possible, testing should not be scheduled for days immediately preceding or following weekends, holidays, or school events that will overly excite the students. The testing room should be well lighted, properly ventilated, and not crowded. With younger students, it is desirable to test in the students' own classroom in groups that do not exceed thirty students.

Proctors are frequently used to assist examiners in administering the tests. In grades four through twelve there should be one proctor for every group of thirty-five students plus a proctor for every fifteen students added to the group.

The test coordinator selects the personnel who will actually administer the tests. Both examiners and proctors should be thoroughly instructed to ensure that the tests are administered according to the directions. Arrangements should be made for proctors and examiners to actually take the test. The instructions for administering the tests given in the Examiner's Manual should be closely followed.

When the test materials arrive, the test coordinator should verify that the materials are complete and correct. Then he or she should acquaint the examiners with the materials, alerting them to any special aspects of the testing program.

Training Examiners

The test coordinator should spend some time training the personnel who will serve as examiners. Suggested duties and recommendations for the examiners are listed below. The test coordinator may prepare a list such as this for use in training the examiners. It may not be necessary to discuss these points with persons who have served as examiners before, but it may be advantageous to distribute the list to them just before each testing date.

1. Read the entire Examiner's Manual. (This is *essential* for anyone who will be giving the test for the first time.)
2. Take the test. Read the directions aloud, learn how to mark the answers, and note the time limits.
3. Provide a positive and supportive atmosphere for the testing situation to reduce student anxiety.

4. Have all materials assembled for quick distribution.
5. Read all directions to the students clearly and distinctly.
6. Make sure that the students understand what they are to do before you begin timing the test.
7. Allow time for questions before beginning the testing session.
8. Follow the timing procedures given in the Examiner's Manual.
9. Observe the students to make certain they understand the instructions, have the proper test page, and mark answers in the designated places.
10. If the printed directions appear to be inadequate, add supplementary remarks as necessary, but never give any student the rationale for, or answer to any test item. (Additional information on clarifying directions is provided below.)
11. Try to prevent students from looking at a neighbor's paper. Special precautions, such as moving desks farther apart before testing, may be necessary to discourage the sharing of answers.
12. In large testing rooms, assign proctors to specific portions of the room and direct them to assume responsibility for the students in that area.
13. If illness or another cause interrupts a student during testing, either erase all answers for the affected test or mark a second response for each marked item. This procedure will ensure that the interrupted test is treated as nonvalid.
14. After testing, use the Group Information Sheet to record notes about the behavior of any student who seemed upset or who answered the items without serious effort. If a student's entire test battery is nonvalid, that student's answer sheet or marked test book should be returned separately to the test coordinator.

Although all directions should be read exactly as they are stated in the Examiner's Manual, there are frequent opportunities throughout the tests to clarify directions for the class or for individuals. This may be done as the sample items are being worked with the students, as well as at the times the examiner is instructed to ask, "Are there any questions?" The Examiner's Manual instructs the examiner to make sure that the students understand the directions before telling them to begin each test.

Further opportunity to clarify directions is provided while the students are taking the test, as the examiner and proctors move about the room. As stated in Part 2 of the Examiner's Manual, help may be given to individual students during the test, as long as assistance is limited to the mechanical aspects of marking answers, clarifying directions, and finding the right place on the answer sheets. Guard against indicating a correct answer or pointing out the rationale of an item. All students must understand what they are to do or their scores on the test will not reflect their skills.

Training Proctors

Suggested duties and recommendations for proctors are listed below. This list should be made available to proctors and the examiners responsible for their training.

1. Become familiar with the contents of the test and the directions before the testing begins.
2. Make certain that you know exactly which students in the testing area are your responsibility.
3. Watch the progress of each student in your testing area.
4. Move quietly about your area throughout the testing session.
5. Do not look over any one student's shoulder long enough to make the student uncomfortable.
6. Make certain that each student is following the directions. If a student has obviously misunderstood, quietly direct him or her in the proper way. If necessary, the instructions read from the Examiner's Manual may be supplemented with additional comments, as long as the student is not given the answer to any test item or the rationale for it.
7. Encourage any student who marks answers without reading the test items to study each item carefully. Note the student's name and report the behavior to the examiner after the testing session.
8. If any students finish a test before the time is up, encourage them to check their work on that test and only that test.
9. Prevent cooperation between students. Advise the examiner if there is evidence of cheating. Do not accuse a student of cheating during the testing.
10. Assist the examiner in identifying students who have obviously not worked up to their best abilities.
11. Follow the examiner's directions in distributing and collecting the test materials.
12. Do not converse unnecessarily with another proctor, with the examiner, or with a student during actual testing.

Description of the PRI

The *Prescriptive Reading Inventory* (PRI) was designed as a criterion-referenced test. The PRI is intended to offer an inventory of the reading behavior of students throughout the elementary school years. The objectives measured by the PRI are those typical of reading curricula across the nation.

The PRI identifies a student's mastery or non-mastery of specific reading objectives and provides information that can be used to reinforce, remediate, or supplement his reading development. As a criterion-referenced test, it is designed to provide evaluation relevent to classroom instruction. That is, it shows the student which objectives he has mastered and which objectives he needs to review in order to progress in reading. In addition, the PRI encourages practical use of this information by prescribing classroom instruction that can give a student substantial remediation in those areas in which he is deficient.

The PRI also provides a means of comparing students to a standardization sample or norm group. This is done by the process of computer scoring only, whereby predicted California Achievement Test (CAT/C) normative scores are generated based upon a correlation of a student's performance on the PRI to the CAT/C reading subtests.

Each level of the PRI tests a series of reading objectives appropriate to a range of age and grade levels in the elementary curriculum; together the levels cover the total range of reading objectives most widely expected of students in Grades 1.5 through 6. Many objectives are tested in two or more successive levels.

The test results of the PRI are reported to the student in the form of a "diagnostic map." This map shows the extent to which the examinee has mastered those reading behaviors that are most widely expected of him in his curriculum. Unlike the standardized test which labels the examinee as reading at a specific grade level, the PRI maps visually indicate student performance on the objectives "expected" to be learned at a particular age and grade level span.

Description of the PRI Reports

The Individual Diagnostic Map

The status of each student in relation to the PRI objectives is reported on an Individual Diagnostic Map (see page 10).

The Map displays for each student those behaviors that he has mastered, those that he has not mastered, and those for which he needs some review. The information is given for all those behaviors that appear in the level of the test he has taken. A behavior he has mastered is marked with a "+." A behavior he has not mastered is marked with a "-." An "R" appears next to those behaviors on which he needs review. (A "review" indication means that a student has shown incomplete mastery of the objective. He may need only a brief review of introductory material, or he may benefit from work with supplementary materials or from particular activities devised by the teacher.) If the student made no attempt to answer any test items related to an objective, his Map will show a blank for that objective. This would indicate that he needs at least as much instruction on that objective as on those that he has not mastered.

The Map is the student's own document that helps him become personally involved in his reading growth. He can plan his study with the goal of changing the minuses or blanks to pluses.

The Objective Mastery Report

The Objective Mastery Report (OMR) reports each student's mastery, his or her need to review, or non-mastery of each objective. It provides summary data for each objective so that the instructional staff can immediately perceive each student's areas of greatest need and best achievement. With the OMR, decisions can be made regarding the grouping of students for instruction of needed objectives. The OMR is displayed on page 11.

The Estimated Norms Class Record Sheet - PRI

The PRI was correlated to the California Achievement Tests, Form C (CAT/C) during the standardization of CAT/C in 1976-77. This correlation makes it possible to produce normative scores that are estimated from the administration of the PRI. Grade equivalents, scale scores, normal curve equivalents and national percentiles are provided on the Estimated Norms Class Record Sheet. This report is displayed on page 12.

NAME ▶ JEAN HARRIS | STATE ▶ CALIF | GRADE ▶ 3
SCHOOL ▶ MILLER | TEACHER ▶ CORNING
CITY ▶ SOUTH FALLS | DATE OF TESTING ▶ 09/73

PRESCRIPTIVE READING INVENTORY
INDIVIDUAL DIAGNOSTIC MAP
BLUE BOOK

+ = MASTERY OF OBJECTIVE, R = REVIEW RECOMMENDED, - = NONMASTERY OF OBJECTIVE

	9. Silent Letters	13. Variant Vowel Sounds: Digraph, Diphthong	14. Phonetic Parts: Variant Sounds	15. Phonetic Parts: Blending
PHONIC ANALYSIS	R	-	-	R

	22. Pronouns: Referent	25. Compounds: Forming	30. Sentence Building: Phrase Selection	31. Phrase Information	32. Affixes: Identifying Prefixes, Suffixes	33. Affixes: Building Words	34. Defining Affixed Words	37. Punctuation: Exclamation Point
STRUCTURAL ANALYSIS	R	+	+	-	+	-	R	-

	45. Meaning of Related Words in Context	46. Most Precise Word in Context	48. Word Definition in Context	49. Word Definition in Isolation	51. Multi-meaning Words and Synonyms	52. Synonyms: Selection	53. Antonyms: Selection	54. Homonyms Pairs: Selection
TRANSLATION	+	-	-	+	+	+	-	+

	57. Event Sequence	58. Story Setting	59. Story Detail: Recall or Descriptive Words	60. Story Detail: Recall by Parts	61. Story Detail: Identify True Statement
LITERAL COMPREHENSION	-	+	+	R	+

	62. Cause or Effect	63. Inference	64. Conclusion: Formation	66. Predicting Future Action	67. Main Idea: Summary, Title or Theme	70. Character Analysis: Descriptive Words, Traits Attitudes	71. Descriptive Words or Phrases	72. Sensory Imagery	73. Idioms or Figures of Speech	75. Simile	76. Metaphor	77. Mood	78. Time Span and Period
INTERPRETIVE COMPREHENSION	-	+	-	+	+	+	R	+	-	-	-	-	-

	80. Literary Forms: Fable	83. Reality and Fantasy	84. Reality and Fantasy: Possibility	89. Author Purpose
CRITICAL COMPREHENSION	-	R	+	-

Published by CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940. Copyright © 1973 by McGraw-Hill, Inc. All Rights Reserved. Printed in the U.S.A.

101-2010-101

M0028

OBJECTIVE MASTERY REPORT

TEACHER CORNING
SCHOOL MILLER ELEM
CITY SOUTH FALLS
STATE CA

GRADE 03
PROCESS NUMBER 000-0812- 0
DATE OF TESTING 09/19/73
RUN DATE 10/01/73

TEST PRI BLUE BOOK

NUMBER OF CASES = 12

		NOT MAS N	REV REQ N	MAS N	MAS PCT
	PHONIC ANALYSIS				
9	SILENT LETTERS	4	2	6	50
13	VAR VOW SNDS-DIGRA,DIPTH	5	2	5	42
14	PHONETIC PTS-VAR SNDS	5	3	4	33
15	PHONETIC PTS-BLENDING	4	2	6	50
	STRUCTURAL ANALYSIS				
22	PRONOUNS-REFERENT	4	1	6	50
25	COMPOUNDS-FORMING	3	1	8	66
30	SENT BLDG-PHRASE SELEC	4	1	7	58
31	PHRASE INFORMATION	6	2	4	33
32	AFFIXES-ID PREFIX,SUFFIX	2	3	7	59
33	AFFIXES-BLDG WORDS	6	2	4	33
34	DEFINING AFFIXED WORDS	3	3	6	50
37	PUNCTUATION-EXCLAM POINT	8	1	3	25
	TRANSLATION				
45	MEAN OF REL WDS IN CONTXT	2	1	9	75
46	MOST PRECISE WD IN CONTXT	6	1	5	42
48	WORD DEF IN CONTEXT	5	2	5	42
49	WORD DEF IN ISOLATION	3	2	7	59
51	MULTI-MEAN WDS AND SYNON	5	1	6	50
52	SYNONYMS-SELECTION	3	0	8	66
53	ANTONYMS-SELECTION	8	1	3	25
54	HOMONYM PAIRS-SELECTION	2	0	10	83
	LITERAL COMPREHENSION				
57	EVENT SEQUENCE	5	2	5	42
58	STORY SETTING	4	1	7	58
59	STRY DET-REC OR DESC WDS	3	2	7	59
60	STRY DET-REC BY PARTS	5	1	6	50
61	STRY DET-ID TRUE STMNT	4	1	7	59
	INTERPRETIVE COMP I				
62	CAUSE OR EFFECT	5	1	6	50
63	INFERENCE	2	2	8	66
64	CONCLUSION-FORMATION	3	3	6	50
66	PREDICTING FUT ACTION	3	1	8	66
67	MAIN IDEA-SUM,TITL,THEME	3	1	8	66
70	CHAR ANAL-DESC WDS,TRTS	5	0	7	59
	INTERPRETIVE COMP II				
71	DESC WORDS AND PHRASES	5	1	6	50
72	SENSORY IMAGERY	6	0	6	50
73	IDIOMS OR FIG OF SPEECH	4	2	6	50
75	SIMILE	6	1	5	42

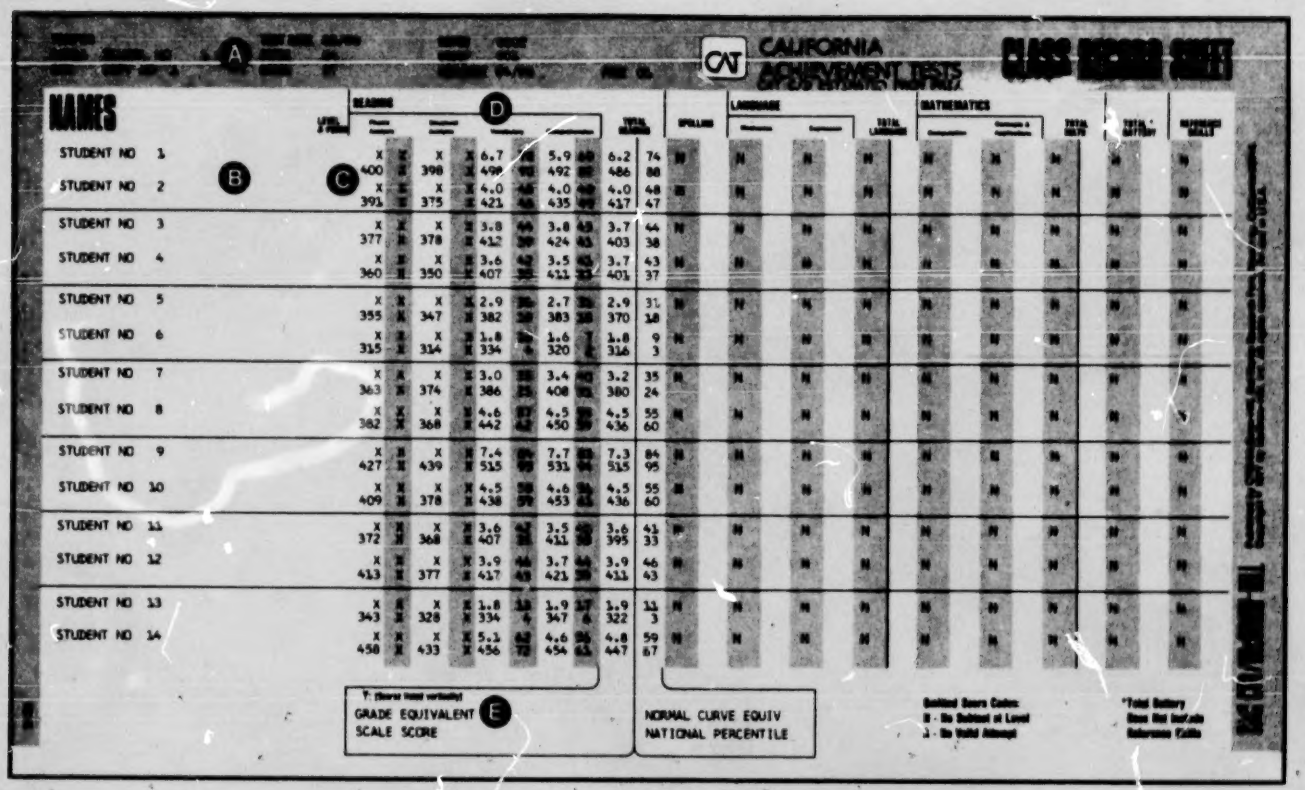
B B C D D E E F H M S W
R R A A L V E A I M O
I O L V V D A L R N I O
S W A I E N I R O T D
C N B D S R S C I R H
O E R S I S J
E E O E L P A M P E
F S N B Y N N I O A N
N R A N N O O R M N
A K A . . M I . . I
N L . . . G . . F
K I . . . . . E R

+ = MASTERED
- = NOT MASTERED
R = REVIEW NEEDED

CTB/McGRAW-HILL

Published by CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940. Copyright © 1973 by McGraw-Hill, Inc. All Rights Reserved. Printed in the U.S.A.

Estimated Norms Class Record Sheet



The PRI was correlated to the California Achievement Tests, Form C. These correlations make it possible to produce normative scores that may be used for evaluation and monitoring student progress.

A = Identification date
B = List of students who were administered the PRI
C = It is estimated that these students would have attained these scores had they taken the reading section of the California Achievement Tests, Form C.
D = Only reading scores can be estimated from the PRI testing.
E = Key showing scores selected by customers

Description of the DMI

The *Diagnostic Mathematics Inventory* (DMI) is based on a comprehensive set of learning objectives of the mathematics curriculum for Grades 1.5 through 8.5. Each objective is stated in behavioral terms and defines the outcome of a unit of instruction. The outcome of learning is the behavior that a student can show after instruction that he or she could not show before. Each item in the test is associated with one of the objectives. The items, then measure the student's mastery of specific learning objectives in mathematics.

Designed as a criterion-referenced test in mathematics, the DMI provides diagnostic and prescriptive information that is relevant to instruction and facilitates individualization. It also provides a means to assess progress throughout the instructional process.

The DMI also provides a means of comparing students to a standardization sample or norm group. This is done by the process of computer scoring only, whereby predicted California Achievement Test (CAT/C) normative scores are generated based upon a correlation of a student's performance on the DMI to the CAT/C math subtests.

The DMI tests evaluate students on their ability to demonstrate the behaviors described in the DMI objectives and provide an individual diagnosis of the students' strengths and weaknesses.

The diagnostic information gained from testing with the DMI is consolidated on reporting forms. Three reports: the Objective Mastery Report, the Pre-mastry Analysis, and the Individual Diagnostic Report, organize the information gained from the testing so that the strengths and weaknesses of individuals are identified. They are fully described on pages

The DMI also provides a means for prescribing appropriate instruction. The *Learning Activities Guide* provides activities for teaching or reteaching each objective in the DMI. The *Master Reference Guides* contains correlations between the DMI objectives and mathematics textbooks. Any one Guide lists pages in a textbook that provide instruction for each DMI objective. The *Guide to Ancillary Materials* lists references to mathematics materials other than textbooks that are useful for teaching the DMI objectives.

The tests, reports, and guides were developed to provide diagnostic and prescriptive information. With this information, the teacher can plan instruction that focuses on the individual.

The tests, reports, and guides for the DMI are designed to fulfill these purposes:

1. diagnose student's strengths and weaknesses in mathematics in terms of specific objectives;
2. prescribe relevant learning experiences to overcome deficiencies in mathematics skills;

3. plan small group instruction to overcome deficiencies shared by only a few students;
4. organize classroom instruction to meet the most prevalent needs of the entire class;
5. evaluate attainment of specific mathematics objectives after a period of instruction;
6. evaluate different materials or methods used to teach mathematics when the specific objectives of instruction are the same.

Description of the DMI Reports

The DMI reporting forms and guides were designed to support the purposes of the tests. They provide a diagnosis of student performance in mathematics and prescriptions for specific learning experiences designed to overcome the students' weaknesses. They therefore assist the teacher in individualizing instruction.

Objectives Mastery Report

This report provided for the class, identifies the objectives mastered by each student and those not yet mastered. It also shows the percentage of students in the class who mastered each objective. A sample report is shown on page 17.

All objectives covered by one level of the DMI are listed on the report for that level, although space limitations require that they be expressed in one word or in a very short phrase.

A plus (+) is recorded for a student on an objective if the student demonstraded mastery of the objective on the DMI. If not, a minus (-) appears. If the student omitted an item, a blank appears. By inspecting the pattern of +'s, and -'s, and blanks on the report, the teacher can ascertain the student's mathematical knowledge. Careful consideration, however, should be given to the minuses and blanks on the report to determine if they represent a real deficiency. For example, occasionally a student may make a simple computation error in a problem that is not intended to measure the basic operations and this careless error will result in a minus even though the student knows the concept. Or, a student may omit or make an error in a simple computation problem but correctly answer a more complex item of the same type. If a student correctly answers a multiplication of a three-digit number by a three-digit number, for example, but misses an item requiring the multiplication of a two-digit number by a one-digit number, the minus shown for the simpler objective should probably be disregarded.

Pre-mastery Analysis

This report, shown on page 18, gives information on behaviors exhibited by the students before they have learned or acquired the behaviors specified by the objectives. It indicates where the teacher should begin in identifying the sources of a student's deficiencies.

Twenty-four categories of pre-mastery behaviors have been identified for the DMI. Within each of these categories, specific pre-mastery behaviors have been described. For example, the second behavior in the category Adding Whole Numbers specifies that the student forgot to add a carried digit. The specific pre-mastery behaviors appear down the side of the Pre-mastery Analysis. Students' names are listed across the top and an asterisk appears across from the specific pre-mastery behavior that the student demonstrated.

The information on this report must be given careful consideration. Many of the pre-mastery behaviors noted are habits developed by the student that lead to errors in computation. Some are misconceptions which have developed over time. Others are nothing more than first-time attempts to solve a problem never before encountered.

Each of the pre-mastery behaviors is fully described in the *Learning Activities Guide*, and the use of pre-mastery information in instruction is explained.

Individual Diagnostic Report

This report, shown on page 19, is provided for an individual student and identifies with a plus (+) or a minus (-) the mastered and unmastered objectives. A blank indicates that the student omitted the item. The report also lists the pre-mastery behaviors which the student demonstrated. It is produced in duplicate form - one copy for the student and one for the teacher to keep on file. Both the teacher and the student can use their copies of the report to keep a record of the student's progress.

The Individual Diagnostic Report is also useful in parent-teacher conference. It can be more meaningful than letter grades because parents can be shown their student's actual strengths and weaknesses.

Estimated Norms Class Record Sheet - DMI

The DMI was correlated to the California Achievement Test, Form C (CAT/C) during the standardization of CAT/C in 1976-77. This correlation makes it possible to produce normative scores that are estimated from the administration of the DMI. Grade equivalents, scale scores, normal curve equivalents, and national percentiles are provided on the Estimated Norms Class Record Sheet. This report is displayed on page 20.

OBJECTIVES MASTERY REPORT

TEACHER TEACHER NO 1
SCHOOL SCHOOL NO 1
CITY CITY NO 1
STATE ST

GRADE 06.3
CTB ID 0001-002-004
DATE OF TESTING 01/76
RUN DATE 03/12/77

TEST DMI LEVEL D

NUMBER OF CASES = 36

	NOT MAS N	MAS N	MAS PCT
1 ADD. OF WHOLE NUMBERS (NR)	4	14	39
3 NUMBER LINE (POINT)	5	31	86
12 NUMBER LINE (ADDITION)	19	17	47
19 ADDITION 5- DIGIT	2	34	94
2 ADD. OF WHOLE NUMBERS (R)	0	31	86
21 ADDITION 2- DIGIT (RG)	1	35	97
22 ADDITION 3- DIGIT (RG)	3	32	89
23 ADDITION 4- DIGIT (RG)	0	35	97
24 ADDITION 5- DIGIT (RG)	7	26	72
25 ADDITION COLUMN (RG)	5	30	83
3 SUB. OF WHOLE NUMBERS (NR)	3	13	36
26 NUMBER LINE (SUBTRACTION)	21	15	42
32 SUBTRACTION, BASIC FACTS	5	31	86
4 SUB. OF WHOLE NUMBERS (R)	2	28	78
34 SUBTRACTION 2D-2D=2D (RG)	3	33	92
36 SUBTRACTION 3D-3D=3D (RG)	6	29	81
37 SUBTRACTION 4D-4D=4D (RG)	8	26	72
38 SUBTRACTION 5D-5D=5D (RG)	4	30	83
5 MULT. OF WHOLE NUMBERS (NR)	13	4	11
39 NUMBER LINE (MULTIPLICATION)	12	24	67
40 MULT AS REPEATED ADD	15	7	19
41 MULT IN ROWS AND COLUMNS	11	20	56
45 MULTIPLICATION, BASIC FACTS	13	22	61

CTB/McGRAW-HILL

Published by CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940. Copyright © 1975 by McGraw-Hill, Inc. All Rights Reserved. Printed in the U.S.A.

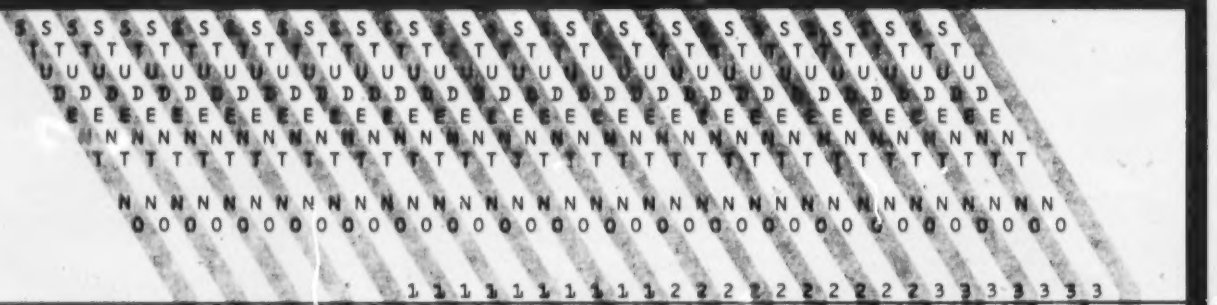
PRE-MASTERY ANALYSIS

TEACHER TEACHER NO 1
SCHOOL SCHOOL NO 1
CITY CITY NO 1
STATE ST

GRADE 06.3
CTB ID 0001-002-004
DATE OF TESTING 01/76
RUN DATE 03/12/77

TEST DMI LEVEL D

NUMBER OF CASES = 36



	N
ADDING WHOLE NUMBERS	
AW1 MISADDED	0
AW2 DID NOT CARRY	1
AW3 CARRIED WRONG DIGIT	0
AW4 MULT INSTEAD OF ADD	1
AW5 ADDED FROM LEFT TO RIGHT	0
AW6 SUBT INSTEAD OF ADD	0
AW7 CARRIED TO WRONG COLUMN	1
SUBTRACTING WHOLE NUMBERS	
SW1 MINUEND FROM SUBTRAHEND	0
SW2 BORROWED COL NOT REDUCED	1
SW3 DID NOT BORROW FROM ZERO	1
SW4 SUBTRA > MINUEND = ZEROS	0
SW5 ADDED INSTEAD OF SUBT	2
SW6 CARRY INSTEAD OF BORROW	1
SW7 MISSUBTRACTED	5
MULTIPLYING WHOLE NUMBERS	
MW1 MULT WITHIN COLUMN ONLY	1
MW2 DID NOT ADD CARRIED DIG	1
MW3 MISALIGNED PARTIAL PROD	1
MW4 ADD INSTEAD OF MULT	4
MW5 SUBTRACTED INSTEAD	0
MW6 MISMULTIPLIED	0
MW7 MISMULT (REPEAT ADD)	11
DIVIDING WHOLE NUMBERS	
DW1 MISMULTIPLIED	4
DW3 MISPLACED ZERO	6

CTB/McGRAW-HILL

Published by CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940. Copyright © 1975 by McGraw-Hill, Inc. All Rights Reserved. Printed in the U.S.A.

M0396

TEACHER ▸ TEACHER NO 1
SCHOOL ▸ SCHOOL NO 1
CITY ▸ DISTRICT # 1

DATE ▸ 02/26/77
GRADE ▸ 06.3
STATE ▸ ST

DIAGNOSTIC MATHEMATICS INVENTORY LEVEL D
INDIVIDUAL DIAGNOSTIC REPORT
FOR STUDENT NO 8

CTB/McGRAW-HILL

* PRE-MASTERY BEHAVIORS PRESENT MAY INDICATE AREAS OF FUNDAMENTAL MISUNDERSTANDING

1 ADD. OF WHOLE NUMBERS (NR)	+
3 NUMBER LINE (POINT)	+
12 NUMBER LINE (ADDITION)	+
19 ADDITION 5- DIGIT	+
2 ADD. OF WHOLE NUMBERS (R)	+
21 ADDITION 2- DIGIT (RG)	+
22 ADDITION 3- DIGIT (RG)	+
23 ADDITION 4- DIGIT (RG)	+
24 ADDITION 5- DIGIT (RG)	-
25 ADDITION COLUMN (RG)	+
3 SUB. OF WHOLE NUMBERS (NR)	-
26 NUMBER LINE (SUBTRACTION)	-
32 SUBTRACTION, BASIC FACTS	-
4 SUB. OF WHOLE NUMBERS (R)	-
34 SUBTRACTION 2D-2D=2D (RG)	-
36 SUBTRACTION 3D-3D=3D (RG)	-
37 SUBTRACTION 4D-4D=4D (RG)	-
38 SUBTRACTION 5D-5D=5D (RG)	+
5 MULT. OF WHOLE NUMBERS (NR)	-
39 NUMBER LINE (MULTIPLICATION)	-
40 MULT. AS REPEATED ADD	-
41 MULT. IN ROWS AND COLUMNS	-
45 MULTIPLICATION, BASIC FACTS	-
54 MULTIPLICATION, POWERS OF TEN	+
6 MULT. OF WHOLE NUMBERS (R)	R
46 MULTIPLICATION 1DX2D	+
47 MULTIPLICATION 1DX3D	+
49 MULTIPLICATION 1DX4D	-
50 MULTIPLICATION 2DX2D	-
7 DIVISION OF WHOLE NUMBERS	-
56 NUMBER LINE (DIVISION)	-
58 DIVISION, BASIC FACTS, N.R.	+
59 DIVISION 3D/1D, N.R.	+
60 DIVISION 2D/1D, R.	-
67 DIVISION, POWERS OF TEN	-
8 OPERATIONS WITH FRACTIONS	R
69 PICTORIAL FRACTIONS	+
70 PICTORIAL FRACTIONS, EQUIV	+
75 ADDITION 3 LIKE	-
81 SUBTRACTION LIKE	+
87 PROPER X PROPER	-
9 ADD. OF DECIMAL NUMBERS (NR)	+
101 DECIMAL FRACTIONS ONE PLACE	+
102 DECIMAL FRACTIONS TWO PLACES	+
103 DECIMAL FRACT THREE PLACES	-
10 ADD. OF DECIMAL NUMBERS (R)	+
104 DECIMAL FRACT ONE PLACE RG	-
105 DECIMAL FRACT TWO PLACES RG	+
106 DECIMAL FRACT THREE PLACE RG	+
11 SUB. OF DECIMAL NUMBERS (NR)	+
107 DECIMAL FRACTIONS ONE-DIGIT	+
108 DECIMAL FRACTIONS TWO-DIGIT	+
12 SUB. OF DECIMAL NUMBERS (R)	+
109 DECIMAL FRACT ONE-DIGIT RG	+
110 DECIMAL NUMBER TWO PLACES	+
111 DECIMAL FRACT THREE-DIGIT RG	+
13 COMMUTATIVE, ASSOC, DISTRIB	+
137 MISSING ADDEND,COMMUTATIVITY	+
139 MISSING FACTOR,COMMUTATIVITY	+
141 MISSING ADDEND,ASSOCIATIVITY	+
143 MISSING FACTOR,ASSOCIATIVITY	+
145 MISSING NUMBER,DISTRIBUTIVITY	+
14 IDENTITY ELEMENT INVERSE RELA	+
148 MISSING ADDEND OR SUM	+
150 MISSING FACTOR	+
153 MISSING ADDEND, ADD/SUBT.	+
15 NUMBER SEQUENCES	R
164 LETTERS	+
165 ADDITION - WHOLE NUMBERS	-
166 SUBTRACTION - WHOLE NUMBERS	-
16 INEQUALITIES, ODDS, MULTIPLES	+
185 WHOLE NUMBERS	-
187 EVEN AND ODD NUMBERS	+
188 MULTIPLES	+
17 METRIC GEOMETRY	+
200 AREA (WHOLE NUMBERS)	+
201 VOLUME (WHOLE NUMBERS)	+
204 GRAPHS	+

0001-002-004

Estimated Norms Class Record Sheet

TEACHER JACKSON, W. | TEST DATE 09/24/77 | BATCH 1200
SCHOOL BAKER | GRADE 06.0 | GROUP 004
CITY ANYTOWN | STATE IA | RUN DATE 10/8/77 | PAGE 1

CAT CALIFORNIA ACHIEVEMENT TESTS **CLASS RECORD SHEET**

CAT C/D ESTIMATED FROM DMI

NAMES	LEVEL & FORM	READING: Phonic Analysis	READING: Structural Analysis	READING: Vocabulary	READING: Comprehension	TOTAL READING	SPELLING	LANGUAGE: Mechanics	LANGUAGE: Expression	TOTAL LANGUAGE	MATHEMATICS: Computation	MATHEMATICS: Concepts & Applications	TOTAL MATH	TOTAL * BATTERY	REFERENCE SKILLS
BERNSTEIN, EDWARD		N	N	N	N	N	N	N	N	N	4.1 53 395 56	4.2 52 426 53	4.2 53 411 55	N	N
DIAZ, MARIA		N	N	N	N	N	N	N	N	N	3.2 23 339 10	2.3 19 358 7	2.9 22 355 9	N	N
ERICSON, LINDA		N	N	N	N	N	N	N	N	N	3.7 42 374 35	3.9 48 418 47	3.8 46 399 43	N	N
GRAY, PAUL		N	N	N	N	N	N	N	N	N	3.6 37 365 28	3.2 36 391 26	3.5 37 382 27	N	N
MIYAMOTO, BILL		N	N	N	N	N	N	N	N	N	3.7 42 373 35	3.5 42 402 34	3.6 41 390 34	N	N
MORRIS, KAREN		N	N	N	N	N	N	N	N	N	1.6 1 265 1	1.3 1 287 1	1.3 1 290 1	N	N
MEAN ***															

TOTAL CASES: 24

KEY: (Scores listed vertically)
GRADE EQUIVALENT
SCALE SCORE

NORMAL CURVE EQU
NATIONAL %-ILE

Omitted Score Codes:
N - No Subtest at Level
A - No Valid Attempt

*Total Battery Does Not Include Reference Skills

Published by CTB/McGraw-Hill, Del Monte Research Park, Monterey, California 93940.
Copyright © 1977 by McGraw-Hill, Inc. All rights reserved. Printed in U.S.A.

M0368

SCORING SERVICE INFORMATION

This is a list of steps that the test coordinator and administrators must follow to prepare answer forms for scoring. Proper completion of these steps will ensure that your tests results will give you the full range of information this test is designed to provide.

STEP I
Verify (or print) the student identification data on each answer form.

Each answer form provides both spaces and grids for recording student information. The process is as follows:

1. Find the row of empty boxes at the top of the name grid.
2. Print the student's last name by placing one letter in each box.
3. Skip one box; then print as many letters of the student's first name as possible.
4. In the first column of circles, find the circle that contains the same letter as the box above it; fill it in.
5. Repeat this process until the appropriate circle is darkened in each column.
6. Darken the blank circle in the column below the blank box between the first and last names.
7. Fill in the circles for the month and year of the student's birth.
8. Darken the circle indicating the student's sex.
9. Print in school and teacher names, student's age and grade, test date.

If the student coded the grids, check each grid for accuracy and completeness. Be certain that one and only one circle is darkened in each column and that the blank circle is darkened between the first and last names.

If the student has not coded the grids, please do so.

STEP II
Check the physical condition of the answer forms.

The condition of the answer forms affects the processing speed as well as the accuracy of the results. Each answer form must have the following characteristics:

1. Response marks are heavy and fill the circles completely. Answer should not be marked with an X
2. Rejected responses are completely erased.
3. Stray and extraneous marks are completely erased.
4. Answer forms are free of bent corners, folds, or creases, pins, staples, or paper clips.

Responsibility for the proper marking of answer forms and Group Information Sheets and assembling of materials for scoring tests with the school or school district. The Scoring Center relinquishes responsibility for errors in reports due to failure to meet this responsibility.

STEP III
Every classroom package of test answer sheets or scorable booklets must be accompanied by a Group Information Sheet filled out according to the follow:

1. Grid the teacher's name or some group identification name if you have other than classroom groupings.
2. Grid the school name. If schools within the district have similar names be sure to distinguish them clearly.
3. Grid the city name and the postal abbreviation for the state name. This name should always be the city or town in which the school is actually located - not the district seat.
4. Grid the test date - month and year.
5. Grid the number of students tested. Be sure that this number is the count of the students whose answer sheets or sets of answer booklets are in the group; be careful not to count booklets twice when each student has more than one.
6. Print the district name in the space provided.

It is very important and necessary that the first eight column areas of the Special Codes section be completed as follows: In areas A, B, and C mark in the school district's three-digit statistical code number. In areas D, E, and F mark in the school building's three-digit statistical code number. In areas G and H mark in the classroom teacher's two-digit statistical code number. The teacher's two-digit code number is to be assigned by the test coordinator or building principal, making sure that no two teachers at the same grade level, within the same school have the same two-digit code numbers. Any two-digit number the test coordinator or principal desires may be assigned.

STEP IV
Assemble the Answer forms.

1. Sort all answer forms by test and level;
   Sort booklets and and answer sheets (these forms cannot be intermixed within one group);
   Sort by school.
2. Be sure that a correct Group Information Sheet is placed on top of each group of answer forms.
3. Scorable booklets from grade 4 should be bound with strong paper strips. Answer sheets should be placed within the Group Information Envelopes that have been provided.

STEP V
Pack the completed answer forms for shipment.

1. Use only sturdy boxes for shipment.
2. Number the boxes: 1 of N, 2 of N, 3 of N, etc. "N" being the total number of boxes. Example: you are shipping 15 boxes; each box will be numbered in sequence - 1 of 15, 2 of 15, 3 of 15, etc.
3. Print your district name on one side of each box.
4. Use packing to hold answer forms secure and immobile during transit.
5. Tape the boxes securely.
6. Address the boxes to:

   Office of Research and Planning
   Clyde Caudill, Head
   19th Floor - Capital Plaza Tower
   Frankfort, Kentucky 40601

STEP VI
Ship your answer forms.

1. Choose a method of shipment that is compatible with your area, your location, time constraints, and economy.
2. You may wish to hand deliver your answer documents to the Scoring Center. If so, they may be delivered to:

   Office of Research and Planning
   Clyde Caudill, Head
   19th Floor - Capital Plaza Tower
   Frankfort, Kentucky 40601

TIME FRAME FOR DIAGNOSTIC TESTING

August 15	District notification to the Department of alternative diagnostic assessment plans, if any
August 1 through 15	Mailing of PRI and DMI to districts
August 18 through September 12	Administration of PRI and DMI to EIP Candidates
November 13	All test answer sheets must be received by the Department of Education before November 13 for scoring

RETURN ANSWER SHEETS TO FRANKFORT AS SOON AS POSSIBLE. MAIL TO:

Clyde Caudill, Head
Office of Research and Planning
Kentucky Department of Education
Room 1915, Capital Plaza Tower
Frankfort, Kentucky 40601

ANSWER SHEETS RECEIVED BY NOON, THURSDAY, OF A GIVEN WEEK WILL BE MAILED TO CTB/McGRAW-HILL ON FRIDAY OF THAT WEEK

CTB/McGRAW-HILL WILL MAIL RESULTS TO LEA'S WITHIN 15 DAYS UPON RECEIPT OF ANSWER SHEETS

TELEPHONE INQUIRIES SHOULD BE DIRECTED TO THE OFFICE OF RESEARCH AND PLANNING. PHONE: (502) 564-4394

Recommended Activities of the EIP Coordinator

1. Inventory the shipment of diagnostic materials your district receives from the Department.

2. Return verification form to the Department after inventory is completed and note any shortages.

3. Determine dates for diagnostic testing within your district.

4. Distribute all necessary diagnostic materials to your schools, based upon the number of EIP candidates identified.

5. Prepare examiners to administer the diagnostic test.

6. Supervise the administration of the tests.

7. Assemble and package the answer documents for delivery to Frankfort as soon after testing as possible. Documents must be in our office no later than November 12, 1981.

8. Collect and inventory all reusable diagnostic materials from the schools involved.